

Last name of instructor (Semester Year)

**California State University, Sacramento**  
**DIAGNOSIS AND MANAGEMENT OF VESTIBULAR DISORDERS**  
CSAD653 - 3 units  
Spring 2021 (AUD-2)

**COURSE FACULTY**

**Course Instructor:**  
**Folsom Hall office #:**  
**Office Phone:**  
**Office Hours:**  
**E-mail address:**

**REQUIRED CLASS MEETINGS TIMES**

Days and times:  
Building: Folsom      Room #:

**REQUIRED TEXTS**

Jacobson, G.P., & Shepard, N.T. (2014). *Balance function assessment and management*. Plural Publishing.

**OPTIONAL TEXTS**

**COURSE WEBSITE**

<https://sacct.csus.edu>

SacCT will be used as the learning management site for dissemination of course readings, handouts, slides, assignments, announcements, and tests/quizzes. The course faculty will have materials posted to SacCT at least 48 hours before class.

**Instructor Communication and Response Time**

Faculty strive to have open communication with students both within and outside of the classroom. Students are encouraged to contact faculty to discuss questions about the course. Responses to telephone or e-mail messages will usually be transmitted within 48 hours during regular working hours. If you do not have a response within this time period, please check your contact methods and resend the message. Faculty will generally respond to student questions received during evenings and weekends once they are back in the office during regular business hours.

**\*Please be aware that all content for this course is the property of the course faculty who have created it and can only be used for this course. Those wishing to use the materials outside of this course must receive written permission from the author/creator.**

**GENERAL COURSE INFORMATION**

**PRE-REQUISITES**

Admission to Doctor of Audiology program; CSAD611, CSAD612, CSAD613, CSAD614, CSAD621, CSAD622, CSAD622L, CSAD623, CSAD624, CSAD631, CSAD632, CSAD641, CSAD641L, CSAD642, CSAD643

**COURSE DESCRIPTION**

Overview

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This course is designed to provide first-year Doctor of Audiology students with an understanding of the pathophysiology of the vestibular system and the assessment and management of vestibular disorders. Clinical procedures that are used to diagnostically assess the vestibular system will also be covered.

Approved Course Description (from CSUS Course Catalog)

Anatomical and physiological bases of the vestibular system, including congenital, peripheral and central, and neurologic factors will also be introduced. Physiological measures of the vestibular system, clinical assessment, and management and rehabilitation.

**WHY IS THIS COURSE IMPORTANT?**

This course provides students with the foundations of disorders of the vestibular system, diagnostic procedures, and management of vestibular disorders. Students will learn the mechanisms behind common vestibular assessments and the support for rehabilitation techniques. This course will prepare students to perform these assessments at off-campus rotations.

**UNIVERSITY LEARNING GOALS**

	1 Disciplinary knowledge	2 Communication	3 Critical thinking/analysis	4 Information literacy	5 Professionalism	6 Intercultural/global perspectives	7 Research
Addressed by this course	X	X	X	X	X	X	X

**GRADUATE LEARNER OUTCOMES**

Mastery of each student-learning outcome listed below is indicated by a grade of B or better on each component of the corresponding measures listed in the table. Students are required to track their progress towards meeting each learning outcome and must make an appointment with the instructor for any grade equal to or less than a B. The instructor will suggest strategies to help you establish competence and knowledge in these areas.

Students should track their progress towards meeting each learning outcome by listing their grades on the table below over the course of the semester.

Upon completion of this course, students will be able to:

1. Identify the key structures and functions of the vestibular system
2. Describe the role of the nervous system (vestibular, ocular, motor) in maintaining balance and equilibrium
3. Explain the pathophysiology of common vestibular disorders
4. List the main components of a case history for evaluating patients with suspected vestibular disorders
5. Perform common clinical vestibular tests
6. Describe how disorders will impact testing and test results
7. Interpret the results of various diagnostic procedures
8. Develop recommendations (audiologic, medical, non-medical, referral) for patients based on test results
9. State examples of interprofessional management strategies with physical therapists

Graduate Learner Outcome	Component Indicating Competence	Grade(s) Received
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1-4, 6-9	Exam (100%)	
4,6-8	Presentation (100%)	
5	Laboratory (100%)	
5	Practical exam (100%)	

## **COURSE/CLASS POLICIES**

### **Course Format**

Lecture

### **Class Preparation:**

All required readings are for the date listed in the course schedule, not the following class period. Students are responsible for all assigned readings, whether discussed in class or not.

### **Class Participation:**

Students are expected to actively participate in class discussions and are required to have read the assigned material prior to class meetings.

### **Class Attendance:**

Classroom attendance is necessary for this course. No more than three unexcused absences are allowed. Students are expected to arrive on time as class begins at X:XX am/pm.

### **Class Assignments**

Course grades will be based on exams (including a practical exam), a lab assignment, and a presentation.

### **Laboratory**

Students will perform a complete ENG or VNG on a classmate, family member, etc., under the supervision of the instructor. Results should be turned in with a clinical report and interpretation of the results.

### **Presentation**

Each student will be assigned a vestibular disorder to present. The date of the presentation coincides with the topic listed on the schedule. Presentations should be 15-20 minutes and use PowerPoint slides. A copy of the slides and/or handout must be provided to the instructor at least 48 hours prior to the presentation. Details about the presentation and the rubric can be found on SacCT.

### **Quizzes**

Weekly quizzes will be available on SacCT one week prior to the due date. Students are expected to complete the quiz before the scheduled due date. Quizzes are based on assigned reading. Students will have 60 minutes to take the quiz; late submissions will receive a 0.

### **Practical Exam**

There will be three exams in the course, and the final exam will include a practical component. For the final exam, students will be asked to complete one aspect of vestibular testing; students should be prepared to perform all aspects of the testing procedures discussed in class. The rubric used to assess performance can be found on SacCT.

### **Exams**

- **Exam absences:** No make-up examinations will be given unless there is a documented emergency for which you have written proof. Any approved make-up exams will be scheduled at the end of the semester (during finals week) and may be administered in a different format from the original exam.

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- **Exam procedures:**

Test arrival/start

Test duration and completion

**Commitment to Integrity**

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

**Sac State’s Academic Honesty Policy & Procedures**

“The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. California State University, Sacramento expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades.” Read more about Sac State’s Academic Honesty Policy & Procedures at the following website: <http://www.csus.edu/umannual/AcademicHonestyPolicyandProcedures.htm>

*Definitions:* At Sac State, “cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means.”

“Plagiarism is a form of cheating. At Sac State, “plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person’s contribution.” *Source:* Sacramento State University Library

*Note:* Any form of academic dishonesty, including cheating and plagiarism, shall be reported to the office of student affairs.

**Understand When You May Drop This Course**

It is the student’s responsibility to understand when he/she need to consider disenrolling from a course. Refer to the Sac State Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include: (a) documented and significant change in work hours, leaving student unable to attend class, or (b) documented and severe physical/mental illness/injury to the student or student’s family. Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if there is a compelling extenuating circumstance. All incomplete course assignments must be completed in accordance with the department’s policy.

**Accommodations**

Inform your instructor of any accommodations needed. If you have a documented disability and verification from the Office of Services to Students with Disabilities (SSWD), and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student’s responsibility to provide documentation of disability to SSWD and meet with a SSWD counselor to request special accommodation before classes start. SSWD is located in Lassen Hall 1008 and can be contacted by phone at [\(916\) 278-6955](tel:9162786955) (Voice) or [\(916\) 278-7239](tel:9162787239) (TDD only) or via email at [sswd@csus.edu](mailto:sswd@csus.edu)

**Course Requirement Grading**

<b><u>Activity</u></b>	<b><u>Points Available</u></b>
Disorder presentation	100
Exam (date and material covered)	200
Exam (date and material covered)	200

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Lab: ENG/VNG	200
Final exam (practical)	50
Final exam (date and material covered)	250
<b>TOTAL COURSE POINTS AVAILABLE</b>	1000

**Overall Percentage Needed**

Note: A grade of "B" or higher is required to count toward the minimum number of units needed to advance to candidacy.

Grade	Percentage
A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%
D	63-66%
D-	60-62%
F	< 60%

**COURSE SCHEDULE OF LECTURE TOPICS AND EXAMS**

Date	Topic and Activity or Quiz and Exam	Readings/ Assignment
1/20	Course introduction Overview of anatomy and physiology of vestibular system	
1/22	Vestibular anatomy and physiology	Jacobson & Shepard- Ch. 1,3
1/27	Vestibular anatomy and physiology	Jacobson & Shepard- Ch. 1
1/29	Vestibular neuroanatomy Vestibular and motor systems	Furman, Cass, & Whitney- Ch. 4
2/3	Anatomy and physiology of the oculomotor system Vestibular-ocular reflex	Furman, Cass, & Whitney- Ch. 2, 5  Fetter, M. (2007). Vestibulo-ocular reflex. <i>Developments in Ophthalmology</i> , 40, 35-51.
2/5	Case history Questionnaires and bedside assessments	Jacobson & Shepard- Ch. 6-7  Roland et al. (2015). Utility of an abbreviated dizziness questionnaire to differentiate between causes of vertigo and

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		guide appropriate referral: A multicenter prospective blinded study. <i>Otology &amp; Neurotology</i> , 36(10), 1687- 1694.
2/10	Review for Exam 1	
2/12	<b>Exam 1</b>	
2/17	Positioning, positional Calorics	Jacobson & Shepard- Ch. 11
2/19	Rotary chair ENG/VNG	Jacobson & Shepard- Ch. 12-13  Palomar-Asenjo, V., Boleas-Aguirre, M.S., Sanchez-Ferrandiz, N., & Perez Fernandez, N. (2006). Caloric and rotatory chair test results in patients with Meniere's disease. <i>Otology &amp; Neurotology</i> , 27(7), 945- 950.
2/24	ENG/VNG	Jacobson & Shepard- Ch. 5
2/26	ENG/VNG	Jacobson & Shepard- Ch. 5
3/2	Computer dynamic posturography	Jacobson & Shepard- Ch. 18-19  Furman, J.M. (1995). Role of posturography in the management of vestibular patients. <i>Otolaryngology- Head and Neck Surgery</i> , 112(1), 8-15.
3/4	Vestibular-evoked myogenic potentials	Jacobson & Shepard- Ch. 20-21  Zhou, G., & Cox, L.C. (2004). Vestibular evoked myogenic potentials: History and overview. <i>American Journal of Audiology</i> , 13(2), 135-143.
3/9	vHIT	Jacobson & Shepard- Ch. 16
3/11	No class	
3/16	Vestibular clinic	
3/18	Review for Exam 2	
3/23	<b>Exam 2</b>	
3/25	Overview of vestibular disorders rehabilitation Benign Paroxysmal Positional Vertigo (BPPV)	Jacobson & Shepard- Ch. 31
3/30	Labyrinthitis/vestibular neuritis Unilateral vestibular loss	Strupp, M., & Brandt, T. (2009). Vestibular neuritis.

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		<p><i>Seminars in Neurology</i>, 29(5), 509-519.</p> <p>Kerber, K.A. (2016). Chronic unilateral vestibular loss. <i>Handbook of Clinical Neurology</i>, 137, 231-234.</p>
4/1	Meniere's disease/endolymphatic hydrops Autoimmune inner ear disease	<p>Ruckenstein, M.J. (2004). Autoimmune inner ear disease. <i>Current Opinions in Otolaryngology Head and Neck Surgery</i>, 12(5), 426-430.</p> <p>Salt, A.N., &amp; Plontke, S.K. (2011). Endolymphatic hydrops: Pathophysiology and experimental models. <i>Otolaryngology Clinics of North America</i>, 43(5), 971-983.</p>
4/6	Superior semicircular canal dehiscence Perilymph fistula	<p>Maitland, C.G. (2001). Perilymphatic fistula. <i>Current Neurology and Neuroscience Reports</i>, 1(5), 486-491.</p> <p>Minor, L.B. (2005). Clinical manifestations of superior semicircular canal dehiscence. <i>Laryngoscope</i>, 115(10), 1717-1727.</p>
4/8	Acoustic neuroma Enlarged vestibular aqueduct	<p>Madden, C., Halsted, M., Benton, C., Greinwald, J., &amp; Choo, D. (2003). Enlarged vestibular aqueduct syndrome in the pediatric population. <i>Otology and Neurotology</i>, 24(4), 625-632.</p> <p>Gal, T.J., Shinn, J., &amp; Huang, B. (2010). Current epidemiology and management trends in acoustic neuroma. <i>Otolaryngology Head and Neck Surgery</i>, 142(5), 677-681.</p>
4/13	Migraine-associated vertigo Vestibulotoxicity	<p>Freeman, S., Priner, R., Elidan, J., &amp; Sohmer, H. (2001). Objective method for differentiating between</p>

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		<p>drug-induced vestibulotoxicity and cochleotoxicity. <i>Otology and Neurotology</i>, 22(1), 70-75.</p> <p>Cha, Y.H. (2010). Migraine-associated vertigo: Diagnosis and treatment. <i>Seminars in Neurology</i>, 30(2), 167-174.</p>
4/15	Age-related vestibular disorders- diagnosis and management	<p>Jacobson &amp; Shepard- Ch. 32-33</p> <p>Iwasaki, S., &amp; Yamasoba, T. (2015). Dizziness and imbalance in the elderly: Age-related decline in the vestibular system. <i>Aging and Disease</i>, 6(1), 38-47.</p>
4/20	Non-vestibular origin disorders	<p>Thompson, T.L., &amp; Amedee, R. (2009). Vertigo: A review of common peripheral and central vestibular disorders. <i>The Ochsner Journal</i>, 9(1), 20-26.</p>
4/22	Vestibular rehabilitation	<p>Jacobson &amp; Shepard- Ch. 31</p> <p>Alsalaheen et al. (2010). Vestibular rehabilitation for dizziness and balance disorders after concussion. <i>Journal of Neurologic Physical Therapy</i>, 34(2), 87-93.</p> <p>Han, B., Song, H.S., &amp; Kim, J.S. (2011). Vestibular rehabilitation therapy: Review of indications, mechanisms, and key exercises. <i>Journal of Clinical Neurology</i>, 7(4), 184-196.</p> <p>Herdman, S.J. (2013). Vestibular rehabilitation. <i>Current Opinions in Neurology</i>, 26(1), 96-101.</p>
4/27	Pediatric vestibular disorders	Jacobson & Shepard- Ch. 25
4/29	Review for final exam	

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5/4	<b>Final exam</b>	
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Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the change.

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